

Implementing an Expressive Writing Study in a Cancer Clinic

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ABSTRACT

Patients at a comprehensive cancer center have participated in a weekly writing program for 7 years. Anecdotal evidence following writing in this clinical setting appeared congruent with the results of expressive writing studies conducted in laboratory settings. To move expressive writing research beyond the laboratory, we evaluated the feasibility of engaging a clinical population in a structured expressive writing task while they waited for an appointment in a cancer clinic. Adult leukemia and lymphoma patients ($n = 71$) completed a baseline assessment, 20-minute writing task, postwriting assessment, and 3-week follow-up; 88% completed the writing task and 56% completed the follow-up. Participants reported positive responses to the writing, and immediately postwriting about half (49.1%) reported that writing resulted in changes in their thoughts about

their illness, while 53.8% reported changes in their thoughts at the 3-week follow-up. Reports of changes in thoughts about illness immediately postwriting were significantly associated with better physical quality of life at follow-up, controlling for baseline quality of life. Initial qualitative analyses of the texts identified themes related to experiences of positive change/transformation following a cancer diagnosis. Findings support the feasibility of conducting expressive writing with a clinical population in a nonlaboratory setting. Cancer patients were receptive to expressive writing and reported changes in the way they thought about their illness following writing. These preliminary findings indicate that a single, brief writing exercise is related to cancer patients' reports of improved quality of life. *The Oncologist* 2008;13:196–204

INTRODUCTION

Twenty years of research indicates expressive writing may enhance physical and psychological well-being [1–3]. Expressive writing involves writing one's deepest thoughts and feelings about life experiences [4–7]. James Pennebaker and his colleagues published the initial investigations of expressive writing and have continued to conduct and

publish research in this area [5, 6, 8, 9]. Early studies involved healthy college students, with subsequent investigations testing the impact of expressive writing in clinical populations, including people with chronic illnesses such as asthma, pelvic pain, arthritis, and cancer [10–12]. In a typical expressive writing study, participants complete three to five writing sessions, lasting 15–20 minutes each, with ran-

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dom assignment to an expressive writing condition or to a control condition in which participants write about a neutral topic. Comparisons between experimental and control participants indicate that expressive writing produces such benefits as reduced physical symptoms and pain awareness, fewer doctor visits, and improved immune function [7, 10, 12–15].

Implementation of Expressive Writing in a Chemotherapy Infusion Clinic

Based on empirical foundations for psychological and physical health benefits of expressive writing, weekly expressive writing interventions were developed as part of the Arts and Humanities Program at the Lombardi Comprehensive Cancer Center (LCCC). These sessions have been conducted in the chemotherapy infusion clinic for 7 years. Patients, family members, medical students, and staff can attend the open writing sessions. The goal is to enable cancer patients and caregivers to experience the therapeutic benefits of writing without increasing distress. To accomplish this goal, cancer is never presented as a specific writing topic, although people are free to write about it if they choose. Universal themes like nature, relationships, and identity are featured as writing topics, allowing participants to control the content and depth of emotion expressed. Attendance ranges from 1–12 people, and approximately 30 people receive the prompt and/or participate in writing each week.

Anecdotal evidence from these clinical writing sessions suggests that writing is very helpful to cancer patients, their families, and medical caregivers. Patients report in their writing the profound impact of cancer on their lives. Examples of patients' writing from this clinical writing program are shown in Table 1. As noted above, although cancer is not featured as a topic in the weekly sessions, it often comes up in patient writing, like the example in column A of Table 1, which was written in response to the prompt, "Write about a choice you made in your life that created a conflict between what you thought was right and what you felt in your heart was right, and your heart won." Others use writing to script an important message to family members (Table 1, column B), or to describe a place of refuge (column C). Many of the writings reveal how the writer's life, outlook, and priorities have changed as a result of the experience with cancer and treatment.

Implementation of a Pilot Writing Program in an Oncology Clinic Setting

The evidence of change reported in weekly writing sessions of the LCCC Arts and Humanities writing program is similar to theoretical and empirical evidence documenting psy-

chological growth and/or finding benefit after the experience of a trauma, including cancer [16–20]. Recent successful implementation of expressive writing and the arts into clinical care further supports the need to empirically test the expressive writing paradigm within a clinical setting [21, 22]. As noted by Pennebaker, the health benefits of writing have been empirically supported through research conducted in the laboratory [23]. This foundation of empirical support warrants testing of expressive writing in the clinical setting, moving from efficacy to effectiveness trials [23]. Given the positive experiences with writing as a clinical tool in the Arts and Humanities program and other clinical writing programs [20, 21], a busy cancer clinic filled with noise and interruptions appeared to be an excellent place to test the feasibility of writing and begin exploring its potential benefits beyond the more controlled conditions of the laboratory.

The primary purpose of our pilot study was to assess the feasibility of conducting a writing study in a busy oncology clinic. Based on anecdotal evidence from the weekly LCCC writing program that indicates cancer may serve as a transformative event for some patients, we also explored differences in linguistic content between two writing prompts: the standard prompt developed by Pennebaker for writing research studies with cancer patients, that is, "Cancer can touch every part of your life—issues of family, love, anger, career, life and death, and even issues about childhood and specific experiences in life. In your writing, let go and explore your deepest thoughts and feelings about the issues that you feel are most important to you right now" (Pennebaker JW, Morgan NP, personal communication, October 28, 2004), and an open-ended prompt related to change: "How has cancer changed you and how do you feel about those changes?" Finally, we were interested in assessing outcomes following the writing, including mental and physical quality of life and reports of whether the writing changed the way participants thought and felt about their cancer experience.

For our primary feasibility aim, we investigated whether participants agreed to the study, whether they were able to complete the writing during clinic appointments, and their overall reactions to the writing task. We hypothesized (a) participants would agree to study participation at a high rate (>65% of participants approached would agree), (b) most participants (>75%) would complete the writing task, and (c) more than half of the participants would report positive responses to the writing as indicated by reports that the writing was helpful, not stressful, and that they would engage in the writing again. We also expected participants would report that the writing produced some change in the way they thought and felt about their cancer experience. As

Table 1. Examples of writing from the Arts and Humanities Program's clinical weekly writing program

A. Write about a choice you made in your life..	B. A message scripted to family	C. Describe a place of refuge
<p><u>Heart Trumping Head</u></p> <p>My grandson followed the tubing all the way from the heavy-duty bag to the opening in my skin. "Blood" I explained His finger traced the deep red line. Face furrowed with concern, he thought for a moment. "I have a heart at home." A soft pillow. A soft heart. Center of life. Vulnerable. At risk. Fragile, it breaks my heart to think I might not be here as he grows. So I protect it.</p>	<p><u>I am a Hawk</u></p> <p>The quality of air has changed, My diagnosis alters space; Water flows softer, heat wraps round A newly frightening place.</p> <p>With body shifting, safe no more, A distance springs up in my world; I am a hawk, on swells I rise, With sun-tipped wings unfurled.</p> <p>No hunter I, instead a soul Attempting flight in spite of fear; On thermals sweet I grasp my loves And pull them to me dear.</p> <p>Remember me, I soundless cry, If treatments fail and hopes abate. Remember that I choose to fly As reconciled to fate.</p> <p>And when you gaze on mountain crests You'll feel me soaring high above – I'll always be there, just past view; I'll shower you with love.</p> <p>I am a hawk, a spirit bright, From lofty heights I'll watch and guide And hover through your days and nights, Forever by your side.</p>	<p><u>Afternoon</u></p> <p>Drinking hot, sweet tea; Feeling its blessed comfort Slipping into my body Curling my cold fingers around The warm, swelling curves of the White porcelain cup, while Looking through my western window At this late afternoon's Golden October sunlight as it Decorates my dogwood tree, which is just beginning to turn Its summer greenness toward The miraculous flamboyance of another autumn, Soon to arrive, and which I am sure to see.</p>

the study was intended to primarily assess feasibility and thus was underpowered to detect differences in outcomes following the writing, we did not make specific predictions related to changes in quality of life.

METHODS AND MATERIALS

Participants

Seventy-one individuals with leukemia or lymphoma being treated at LCCC between July and November 2006 completed baseline assessments and were randomized to receive one of the two writing prompts. Potential participants were attending an appointment with a medical oncologist (BDC) for treatment or follow-up. Participants were eligible for the study if they were 18 years of age or older, were being treated at the hematology clinic at LCCC, and could read and write in English. Patients were ineligible for the study if cognitive impairment precluded provision of informed consent.

Procedure

Procedures were approved by the Georgetown University Institutional Review Board. Recruitment fliers were distributed by a nurse technician to all eligible participants

when they entered the clinic or when their vital signs were recorded. Patients were seated in the oncology clinic waiting room, and a member of the research team approached patients holding a recruitment flier. Patients were briefed on the study and asked if they were interested in learning more about it. Research staff described the study in more detail to those who expressed interest and reviewed the informed consent documents. Patients were encouraged to complete the study during the appointment time rather than delay participation or take study materials home. As participants had not received any advanced information about the study prior to entering the clinic, enrollment required spontaneous consent to participate. Participants were informed that all of their responses, including their writing, would be kept confidential and that no member of their medical team, including their oncologist, would have access to their writing or their responses.

After completion of consent forms and baseline assessment, participants were randomized to one of the two writing conditions and provided with a large envelope that contained the assigned writing prompt and two sheets of blank paper. Patients were informed that they would be asked to write continuously for 20 minutes in response to the writing prompt. Writing was completed either in the

waiting room or in individual examination rooms while patients waited to be seen by their medical team. If the writing process was interrupted, the time was noted by a member of the research team and the participant was instructed to complete the 20-minute writing assignment after the appointment. Participants were asked to place their writing in an envelope and seal it. Immediately after the writing, participants completed the postwriting assessment and indicated whether they would permit a member of the study team to call them for the 3-week follow-up telephone interview. At the conclusion of the study, participants were given a list of support services available at LCCC. Participants received no compensation, but were mailed a summary of the study findings.

Baseline Survey

Quality of Life

Mental and physical components of quality of life were assessed through the 12-item Medical Outcomes Study, Short Form (MOS-SF12). This form has been used extensively with medical populations and has good reliability and validity [24]. Internal consistency reliability in the present study was $\alpha = 0.83$.

Cancer-Specific Distress

We measured cancer-specific distress with the 15-item Impact of Event Scale (IES) [25]. The IES has been frequently used as a measure of cancer-specific distress and has sound reliability and validity [26]. Items on the IES were keyed to thoughts and feelings related to cancer (i.e., “I thought about the cancer when I didn’t mean to”), with responses made with the following options: not at all = 0, rarely = 1, sometimes = 3, and often = 5. Two subscales measure intrusive (seven items) and avoidant (eight items) ideation. Internal consistency in the present study was $\alpha = 0.86$ for intrusive thoughts, $\alpha = 0.78$ for avoidant thoughts, and $\alpha = 0.85$ for the total score.

Postwriting Survey

Demographics and Medical Information

Participants provided information about marital status, yearly household income, level of education, current work status, and zip code in the postwriting survey. Demographic information was collected as part of the postwriting survey to minimize the length of the prewriting survey and eliminate possible distress (e.g., reporting on stage of illness) or distraction (e.g., thinking about annual income) prior to writing. Participants also reported the type, stage, and date of their cancer diagnosis, along with information on relapse

of illness and current treatment. Participants provided permission for the study team to access information from their medical records for additional demographic information (age, sex, and race) and verification/clarification of medical diagnoses, treatment history, etc.

Writing Process Questions

Participants responded to questions related to their writing topic and writing experience [27]. One item assessed how upsetting or uplifting the writing topic was for the participant. In addition, five items assessed how personal the topic was, how much they had previously talked to others about their cancer, how much they had revealed their true feelings and emotions when talking with others about the topic, how much they revealed their true feelings and emotions in their writing, and whether they would participate in this type of task again. With regard to reactions to the writing task, four questions asked participants to indicate to what extent they found the task difficult, stressful, enjoyable, and helpful. All ratings were made on seven-point Likert scales with appropriately labeled endpoints (e.g., “not at all” to “a lot”).

Social Constraints

Social constraints were measured using the Social Constraints Scale [28]. This 15-item measure assesses the extent to which one’s social environment (friends or family) inhibits expression of thoughts and feelings. This scale was keyed so that questions asked about social constraints regarding the participants’ efforts to talk about their cancer. Responses were made on a four-point Likert scale with options ranging from “never” to “often.” The scale has good reliability [29], and internal consistency in the present study was $\alpha = 0.92$.

Writing History and Experience

Participants were asked if they had ever written in a journal or diary (yes or no), and if yes, how often they had written in a journal or diary currently and in the past. Finally, two separate questions asked participants to report whether the writing changed the way they *think* about their illness or other aspects of their lives and also whether writing changed the way they *feel* about their illness or other aspects of their lives. Responses to these two questions were made on a five-point Likert scale. If participants indicated that the writing promoted a little, moderate, quite a bit, or extreme change to their thoughts or feelings, they were also asked to describe with a written response how the writing experience changed these thoughts or feelings.

Follow-Up Survey

Participants who agreed to be contacted for the optional 3-week follow-up were called to complete a brief telephone interview. The interview included the writing experience questions described above (whether writing about cancer changed the way the participant thinks or feels about the illness or other aspects of life), the seven-item intrusive thoughts subscale of the IES (internal consistency at follow-up, $\alpha = 0.80$), and a modified version of the MOS-SF12 (10 items, internal consistency at follow-up $\alpha = 0.71$). We used only the intrusive thoughts subscale and a modified version of the MOS-SF12 to reduce the overall number of items on the follow-up survey to minimize participant burden.

Data Preparation and Analyses

Feasibility outcomes were assessed through participant tracking and generation of frequencies and descriptive statistics. To explore linguistic differences between the two writing prompts, writing texts were transcribed verbatim by a member of the research team and linguistic content was analyzed using Pennebaker's Linguistic Inquiry and Word Count (LIWC, version 2.1) [30]. The LIWC has been used extensively in expressive writing and emotional expression research laboratories [30–32] to analyze text samples from a large variety of populations. In addition to LIWC analysis, writing texts were qualitatively evaluated for evidence of transformation and coded into distinct categories of words or phrases representing distress, acceptance, gratitude, and transformation.

To evaluate bivariate predictors of outcomes related to participants' writing experiences and psychosocial outcomes (changes in thoughts or feelings related to the cancer experience and quality of life), we used χ^2 tests, *t*-tests, and Pearson (for relationships between two continuous variables) and point-biserial (for relationships between a continuous and a dichotomous variable) correlation coefficients.

RESULTS

Participant Characteristics

Of the 71 participants, 51.4% ($n = 36$) were men and 82.5% were white (13.0% black, 4.4% other). Participants ranged in age from 21–88 years (mean, 55.0 years; standard deviation [SD], 15.0 years) and were, on average, 3.8 years out from their initial diagnosis (SD, 5.18 years; range, 0–21 years). Participants had a variety of leukemia and lymphoma diagnoses, including chronic lymphocytic leukemia (22.5%), non-Hodgkin's lymphoma (28.2%), and Hodgkin's lymphoma (15.5%). Most participants were

married (72.7%) and had attended college or graduate school (89.1%). Slightly less than half were employed full time (44.7%).

Feasibility: Rates of Participation

In total, 98 patients eligible to participate were approached about the study, and of these, 71 completed the baseline assessment (a response rate of 72%), 63 completed the 20-minute writing session, and 40 completed the optional 3-week follow-up interview. Thus 88% of participants completed the experimental writing task and postwriting survey and 56% of those agreeing to the writing completed the 3-week follow-up.

Feasibility and Acceptance of Writing Study

The majority of participants (75%) experienced at least one interruption during their 20-minute writing task. Interruptions included medical staff meeting with patients, family members entering and leaving the exam room, or patients exiting the exam room upon completion of the appointment. Despite these interruptions, the majority of participants reported positive responses to the writing experience. Specifically, on the 1 (not at all) to 7 (a lot) Likert scale, participants rated difficulty (mean, 2.16) and stressfulness (mean, 2.04) of the writing task as low and how much they enjoyed the writing task as moderate (mean, 4.3). Participants also indicated that they wrote about a personal topic (mean, 5.1), revealed their true feelings (mean, 5.7), and would most likely participate in the task again (mean, 4.8).

Feasibility: Linguistic Outcomes

As might be expected in a clinic-based writing study in which many of the participants were interrupted during the writing task, overall word count and percentages of certain word categories (i.e., affective and cognitive mechanism words) were lower than rates reported in laboratory-based writing studies. Specifically, participants wrote a mean of 267.6 words (SD, 114.8 words; range, 71–648 words), whereas across 20 expressive writing studies, the mean word count was 327 words [30]. Although lower than laboratory-based studies, the mean word count in the present study is appreciably larger than the suggested minimum of 35 or more words per individual writing sample necessary for LIWC analyses [33]. Regarding linguistic outcomes between the two writing prompts (Pennebaker's standard prompt and the open-ended prompt related to change), no differences were evident.

Psychosocial Outcomes: Changes in Thoughts or Feelings About Cancer

Immediately postwriting, almost half (49.1%) the participants reported writing changed the way they thought about

their illness: “Writing helps me stand back and reflect on what has happened”; whereas only 35.2% reported writing changed the way they felt about their illness: “I felt a lot calmer and more able to move on after writing about it and being forced to think about it. I loved writing about my experience.” At the 3-week follow-up, 53.8% reported writing changed their thoughts and 38.4% reported writing changed their feelings about their illness.

A few demographic and medical variables were related to participants’ reports of whether the writing experience changed their thoughts or feelings about their illness or other aspects of their lives. Specifically, reported changes in thoughts or feelings, as assessed immediately postwriting, were related to having written in a journal ($r_{pb} = 0.29$; $p = .04$), and age ($r = -0.30$; $p = .03$). Having written in a journal and younger age were associated with greater reports of change in the way participants thought about their illness immediately following the writing. Likewise at the 3-week follow-up assessment, younger age was associated with more change in thoughts or feelings ($r = -0.34$; $p = .04$). In addition, less time since diagnosis was related to greater changes in feelings about the illness because of the writing ($r = -0.32$; $p = .04$) at the 3-week follow-up.

Exploratory Psychosocial Outcomes: Quality of Life

We conducted exploratory analyses to determine whether linguistic characteristics of the writing or reports of changes in thoughts or feelings after writing were related to quality of life outcomes. In bivariate analyses, poorer mental quality of life at follow-up was related to the use of more sad words ($r = -0.32$; $p = .04$), the use of more anxious words ($r = -0.33$; $p = .04$), greater reports of social constraints ($r = -.48$; $p = .006$), and greater intrusive thoughts ($r = -0.44$; $p = .001$) at baseline. Adjusting for baseline mental health quality of life, none of the variables (sad words, anxious words, social constraints, or intrusive thoughts) remained significant predictors of mental health quality of life at follow-up.

In bivariate analyses for physical quality of life outcomes at follow-up, greater use of affect words ($r = 0.45$; $p = .004$), specifically more positive emotion words ($r = 0.50$; $p = .001$) and more anxious words ($r = 0.41$; $p = .009$), was related to better physical quality of life at follow-up. In addition, reports of greater change in how the writing made the person think about his or her illness immediately postwriting was related to better physical quality of life at the 3-week follow-up ($r = 0.32$; $p = .04$). After adjusting for physical health quality of life at baseline ($\beta = 0.75$; $p = .00$), a greater degree of change in the way the writing made the person think about his or her illness as assessed imme-

diately postwriting was significantly associated with better physical quality of life scores at follow-up ($\beta = 0.23$; $p = .031$). Linguistic variables (affect, positive emotion, anxious words) were no longer significant predictors of physical quality of life in the multivariate model.

Qualitative Evidence of Transformation

In addition to the quantitative data highlighting participants’ responses that the writing changed the way they thought about their cancer experience, we were interested in whether participants indicated in their writing that cancer brought about meaningful psychological changes in their lives. Thus, we conducted initial content analyses of the writing texts, examining each text for themes, words, and phrases indicative of the transformative nature of the cancer experience. Of the 63 texts, 60 (regardless of linguistic prompt) contained evidence of transformation as identified by specific themes (Table 2). Many of the changes expressed in the writing were positive and related to feelings about family, spirituality, work, and the future. As one patient wrote, “Don’t get me wrong, cancer isn’t a gift, it just showed me what the gifts in my life are.” Words and phrases from the writing texts appeared to illustrate a continuum of emotional transformation that may occur after a cancer diagnosis, beginning with the shock of diagnosis (e.g., mortality, shocked, uncertainty), followed by indications of acceptance (e.g., resigned, relaxed, readjust), expressions of gratitude (e.g., thankful, appreciate, grateful), and words related to transformation (e.g., more loving and giving, change in persona, new interests).

DISCUSSION

The present study tested the feasibility and assessed the initial linguistic and psychosocial outcomes following implementation of an expressive writing intervention conducted in a busy oncology clinic. Our ability to recruit participants and conduct the writing sessions before and during medical appointments and the participants’ positive responses to the writing intervention indicate that implementing a writing intervention in a “real-world” setting is possible, acceptable, and beneficial to patients. Results suggest that patients are able to express their thoughts and feelings on paper, even when the writing takes place in a cancer clinic waiting area or examination rooms where frequent interruptions from the medical team may occur. Moreover, despite the pilot nature of the present study, initial findings suggest that a single, 20-minute writing exercise led to changes in how some patients thought about their illness. In exploratory analyses, after controlling for baseline variables, changes in thoughts about the illness resulting from the writing were related to better physical quality-of-life scores at follow-up.

Table 2. Evidence of transformation: Ten selected texts

	Distress words	Acceptance words	Gratitude words	Transformative words
1	Mortality	Control, understanding	More positives than negatives	Increased spirituality, refocus, re-evaluate, prioritize, new interests
2	New symptoms, fears returned, uncertain outcome, concern for wife, treatment worries	Emotional recovery, all will be well	Affirm wife's, friends' support	Writing helped focus on positive
3	Future dreams end, assumptions become hopes, intrusive thoughts	Balance worry with joy	Faith conquers fear	Time for family, travel
4	Retreat, cocoon	Things happen for a reason, reflect/sort feelings out	Everything works out for the best	Attitude change, priorities change
5	Denial, sadness, fear	Acceptance, peace	Benefit, lesson, wake up call	Taking ballet, painting, leave the world with peace, happiness, and no regret
6	Shock, scared, mad, why me	Recognition, not helpless, educate, deal with it	Cancer a gift, thankful for each day	Regular exercise, healthy eating, death brings understanding, make own decisions
7	Tears, loss invincibility	Rationalize hope	Values affirmed	More empathy, change in personae, softer, less TV, more good books and music
8	Hard on family, hard to express	Enjoy life, don't put things off	Grateful for lessons	Change, two identities, pre- and postcancer compete, older than peers
9	Confused, upset	Relaxed, accepting, no blame	Appreciate caring, good feelings	Exercise, begin treatment fit, supporting worried friends and family
10	Complete emotional/physical destruction, hurricane Katrina	Do what I'm supposed to	Opportunity to rebuild, feeling better	Fresh start, concentrate better, live a fulfilling life, no time wasted, do my best

Although these findings require replication within a larger trial, having patients write about their thoughts and feelings about cancer while waiting for their appointment appears feasible and may even result in some positive benefits. We did not find evidence of linguistic differences between the two writing prompts, suggesting that instructing patients to write about their deepest thoughts and feelings or how cancer has changed them does not result in significantly different writing content as assessed by the LIWC linguistic categories. Additional qualitative analyses (i.e., content analysis with two independent coders) of the writing texts in the present study is warranted, as certain aspects of

whether cancer served as a transformative life event for participants may not be adequately captured by the word count approach of LIWC analyses.

Implementation Issues

A number of issues related to writing in the cancer clinic became evident during the course of the study. Although we had a decent participation rate (72%), decliners frequently appeared preoccupied with their upcoming medical appointment. It is also possible that the spontaneous nature of the study, requiring participants to accept and engage in the study "on the spot" may have discouraged participation. In addition,

setting the writing task in a public, versus a private, place may have impacted writing outcomes, because Frattaroli [1] identified writing privacy as one moderator of beneficial outcomes. The high percentage (75%) of participants who experienced at least one interruption during their writing task may account for the lower overall word count and less frequent use of certain words (i.e., affective and cognitive mechanism words) compared with laboratory-based writing studies. Other real-world confounds to the implementation of the writing intervention include the presence of others during the writing process (and even active interference in one case), hindrance of recruitment efforts when the medical technician was too busy to distribute study fliers, and requests to complete the writing process at home when people were pressed for time. Of the group who indicated they would complete the writing and postwriting surveys at home ($n = 15$), seven (46%) returned study materials by mail or in person. A number of participants (11.3%) declined permission for a member of the study team to conduct the follow-up telephone assessment. Because permission to call was requested immediately post-writing, some participants may have been experiencing mild heightened concern or distress [3] and thus may have declined the follow-up assessment for this reason.

Despite these issues, results indicate potentially positive outcomes in terms of relationships among the writing process, writing content, positive changes in thoughts and feelings related to one's illness, and quality of life. In addition, patient acceptance of and interest in the writing study suggest that not only are patients willing to engage in expressive writing, but that they can do so during the course of a medical appointment. Several aspects of the present study, whose primary aim was to test the viability of a single, spontaneous writing intervention in a cancer clinic, would typically be considered threats to internal validity in an efficacy trial. Specifically, we used a consecutive sample of patients treated by only one physician and implemented the writing intervention in an uncontrolled manner (e.g., interruptions occurred, writing was not always conducted in a private place, writing occurred both before and after the medical appointment, etc.). These aspects represent a real-world setting and are appropriate to this pilot study.

Limitations to the present study include the lack of measurement of the exact frequency and duration of interruptions

during the writing task, the short follow-up assessment period (3 weeks), the small sample size, and having a predominantly well-educated sample. In this study, we chose to focus on leukemia and lymphoma cancer patients because expressive writing had not been previously explored in this population. Future trials evaluating the effectiveness of expressive writing in real-world settings can continue to explore benefits within a population of leukemia and lymphoma patients and also expand to other cancer patient populations. In addition, specifics associated with the writing process in a clinic setting, such as the number of interruptions and emotional depth of the writing, can be measured.

CONCLUSION

The present study suggests that expressive writing can be successfully conducted within a busy oncology clinic and provides support for future efforts to move beyond efficacy studies of expressive writing into community- and clinic-based effectiveness trials. Moreover, integration of expressive writing programs into existing supportive care or arts programs for individuals with cancer is likely a worthwhile endeavor [11, 20, 21]. Translating research evidence into empirically supported clinical care is an important step toward improving the psychological and physical health of people with cancer.

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Other: Bruce D. Cheson paved the way, counseled, and garnered support among clinic staff for this study.

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